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The Commonwealth of Independent States' Troubled Energy Sectors

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The energy sector plays a large economic role in several of the countries of the former Soviet Union, given their vast reserves of oil and natural gas. But the sector is riddled with distortions and inefficiencies—especially because of discriminatory access to transit pipelines—that hinder both intraregional and external trade and keep the region from realizing its economic potential.

Since the breakup of the Soviet Union, the story of the oil, gas, and electricity sectors in the Commonwealth of Independent States (CIS)—the economic alliance of 12 of the former Soviet republics (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan)—has been one of missed opportunities. Trade outside the CIS and the Baltic countries, although growing—in 1999, about 50 percent of the oil produced in the region was exported to countries outside the CIS and the Baltics, up from only 22 percent in 1992—is less than it could be if distortions in key parts of the sector were addressed.

With the creation of national borders, five countries emerged as significant net energy exporters (see Box 1). The net importers, which had been accustomed to very low energy prices, suffered massive terms of trade shocks, being forced to pay high prices to monopoly suppliers, while net exporters found that pipeline access to regional and European markets fell largely under the control of neighboring countries. National governments took advantage of monopolistic positions to extract rents by limiting pipeline access. At the same time, lack of access to Western markets enabled many net exporters to avoid the kind of market discipline that comes from competition in world markets. Isolation from

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world energy markets allowed barter and other forms of noncash payment to flourish. Arrears on energy payments—sometimes used as a source of budgetary financing—rose sharply for the net importers, contributing to the rapid growth of external debt. Failure to honor contracts became commonplace, and cross-border disputes concerning energy trade disrupted trade flows.

Box 1
Which CIS countries are significant net energy exporters?

Russia is the largest producer and exporter of both oil and natural gas in the CIS. It accounts for about 80 percent of the CIS's crude oil production and a similar share of regional net exports; the bulk (about 85 percent) of its crude oil exports go to countries outside the CIS. Natural gas from Russia accounts for about 25 percent of total natural gas exports to Central and Western Europe. Kazakhstan, which is rapidly emerging as a major oil producer, is the second largest oil producer in the region; most of its exports also go to non-CIS countries. Azerbaijan is a net oil exporter as well, with its exports transiting Georgia and Russia to world markets. Turkmenistan and Uzbekistan are large producers and exporters of natural gas within the CIS; they are unable to export to Central and Western Europe because of restrictions on their access to Russian transit pipelines.

As a result of delays in much-needed reforms, vested interests have become entrenched and investment decisions distorted. Low domestic prices have encouraged the inefficient use of energy by households and industries. By international standards, energy-use intensity levels in the CIS remain extremely high, not only in the region's net energy exporters but also in energy-importing countries, such as Belarus and Ukraine.

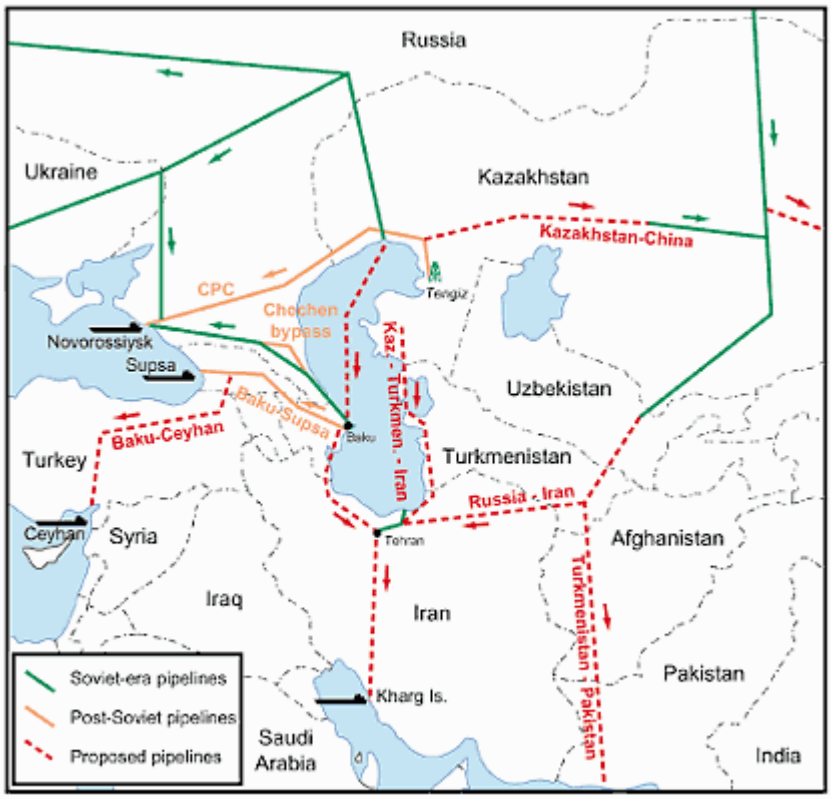
The causes

There are a number of reasons for the problems that have hobbled the CIS's energy sector, including discriminatory and monopolistically controlled access to transit pipelines, coupled with too much state involvement and distorted prices.

Unreliable and discriminatory access to transit pipelines. Most transit routes go through Belarus, Russia, and Ukraine, all of which set discriminatory tariffs on transit access that favor domestic suppliers; unsanctioned use in these countries has

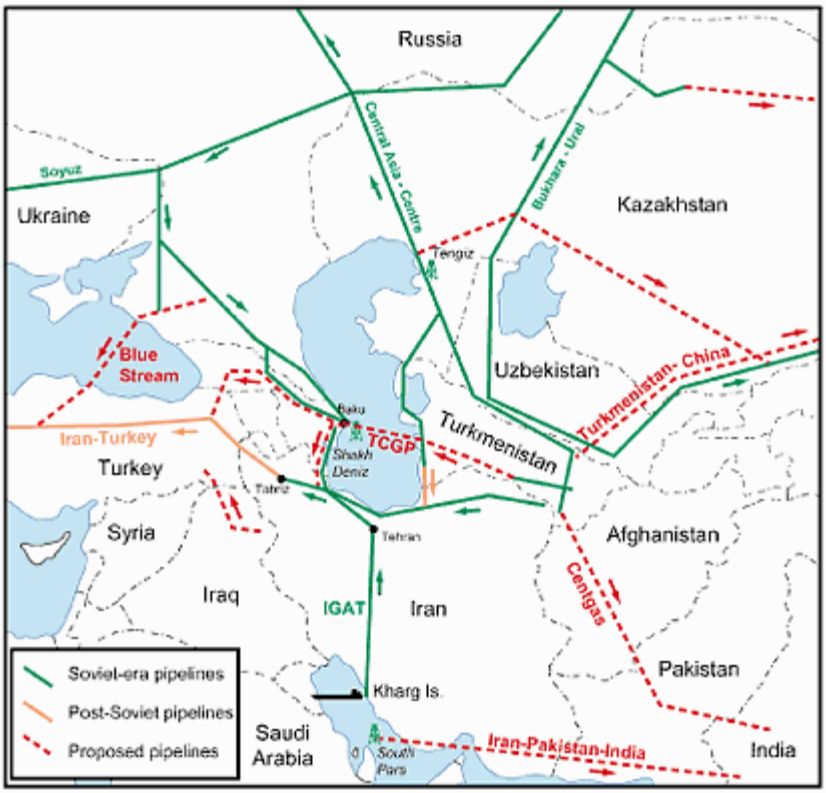
been large (see maps). Russia must transport its oil and gas through Ukraine and, to a lesser extent, Belarus, for export to the rest of Europe. The transit of gas through Ukraine has been particularly problematic for Gazprom, which therefore concluded an agreement in 2000 with a Western consortium to study the feasibility of constructing a gas pipeline bypassing the country. Similar difficulties have led Transneft to complete an oil pipeline to bypass a section of the pipeline running through southeastern Ukraine to Rostov-on-Don.

Oil pipelines in the Caspian region



Courtesy of Center for Global Energy Studies

Gas pipelines in the Caspian region



Courtesy of Center for Global Energy Studies

At the same time, Russia enjoys a virtual monopoly as the dominant supplier of transportation services for the Central Asian countries and has restricted the access of other net exporters in the CIS to the key transit routes to Western Europe that are under its control. Kazakhstan, Turkmenistan, and Uzbekistan are among the exporters most seriously affected by limited access to Gazprom's pipelines and by distorted fees.

The only gas export route available to Turkmenistan after independence did not allow it to reach markets outside the countries of the former Soviet Union, and each country along this route was able to extract economic rents on Turkmenistan's sales to other CIS states and the Baltic republics. Of the two pipelines available to Azerbaijan, the one through Georgia has very limited capacity; the other, which is on the Transneft system through Russia, has very high transport costs. Kazakhstan's access to Transneft has been administratively set. However, the country's export prospects have become brighter with the coming onstream in 2001 of the Caspian Pipeline Consortium (CPC) pipeline, which connects the Caspian basin Tengiz field to Novorossiysk, on the Black Sea. CPC will soon have links to Kazakhstan's other major fields. The new pipeline has put Kazakhstan in a better bargaining position, as evidenced by a

recent agreement with Russia securing Kazakhstan's long-term access to the Transneft pipeline and another agreement with Gazprom establishing a joint venture for gas exports.

State involvement. Although Russia, the biggest player in the oil and gas sectors, has privatized most of its oil production, the state is still heavily involved in oil transport (both domestic transportation and transit through Russia). The state-owned firm Transneft controls 95 percent of domestic crude oil transportation (excluding transit). The administrative allocation of crude and refined oil exports drives a wedge between domestic and world market prices. According to IMF staff estimates, this wedge was equal to about 2 percent of GDP at the end of 2000 (including the impact of export duties). The production-based allocation of part of the oil export pipeline capacity creates an incentive for oil companies to overproduce crude oil. The excess production is either sold domestically or refined (for domestic sale or export). In addition, exports of certain refined-oil products are conditional on the fulfillment of domestic delivery targets.

State ownership of Transneft also causes serious distortions in neighboring oil-exporting countries. Monopolistic practices have blocked attempts by foreign firms, chiefly in Azerbaijan and Kazakhstan, to use the Transneft pipeline to access deepwater ports in Novorossiysk and Ventspils, forcing the firms to develop higher-cost or higher-investment alternatives.

In the natural gas sector, the largest supplier, Gazprom, which is 38 percent state owned, controls 90 percent of production, 80 percent of reserves, and the transportation network and has monopoly rights to export gas outside the CIS. Gazprom has long engaged in quasi-fiscal activities by delivering low-cost gas throughout Russia and to selected CIS countries (notably Belarus).

In the Russian electricity sector, the state dominates all activities—generation, transmission, sales, and distribution—through its 52 percent share in RAO UES, which, in turn, has ownership stakes in all but 2 of the 74 vertically integrated regional energy companies. RAO UES owns the federal high-voltage grid and accounts for 84 percent of Russia's total generation capacity. Electricity is priced below market, with an implicit subsidy of about 3-6 percent of GDP. There is also significant cross-subsidization of residential tariffs by industrial tariffs.

Distorted prices. The exporting CIS countries' limited access to

world markets puts downward pressure on prices of energy for domestic consumption and for export to their CIS neighbors. Domestic oversupply has often led to the introduction of trade restrictions on energy products and discourages governments from tackling politically difficult reform issues.

Natural gas prices are well below world market prices and vary considerably within the region. In recent years, the highest prices reported for Russian gas were for sales to Western Europe—$125 per thousand cubic meters—compared with $30 per thousand cubic meters on sales to Belarus in 2000. In some countries, such as Belarus, gas pricing has a political dimension and is used to advance foreign policy objectives. In other cases, national control over gas pipelines has helped keep domestic prices low—for example, Ukraine has been able to use its monopoly power over gas pipelines to obtain gas at a lower cost from Russia, although prices are not always transparent, being "bundled" with transit fees.

Gas prices are also influenced by how payment is made. The buildup of significant arrears has curtailed credit arrangements, and countries have frequently resorted to barter, which implies that many of the prices quoted in gas deals are essentially of an accounting nature. These largely nontransparent transactions contribute to price discrimination and create opportunities for corruption and tax evasion. It is not possible to determine the true effective price at which gas is delivered under barter contracts because the rules are unclear for determining the price at which eligible barter items are valued. Some countries have paid for fuel deliveries by giving the supplier equity in domestic energy companies.

While less than 1 percent of the region's electricity production is traded with the rest of the world, there is substantial intraregional trade—Russia is a large player in this market as well—although trade is limited by discontinuities in regional transmission systems and inefficient distribution of power. Prices for traded electricity appear to be well below full cost-recovery levels, and, as is the case for gas, payment may be handled through barter and swap arrangements (for instance, gas from Uzbekistan is swapped for electricity from the Kyrgyz Republic).

By contrast, oil trade between the CIS countries is now generally conducted on a cash basis and at market prices. However, export prices for Kazakh crude oil vary considerably across markets and producers, not only because of swaps of

crude oil conducted at accounting prices but also because of Kazakhstan's dependence on the Russian Transneft pipeline system.

How to reform the sector

There is a broad consensus on what needs to be done to make the energy sector more efficient. The World Bank and others have advised the CIS countries to dismantle monopolies and allow market-based access to transportation systems to world markets. They have also recommended the establishment of independent regulatory frameworks to address monopolistic practices and ensure transparent and nondiscriminatory access to transit pipelines. Moreover, they have stressed the need to raise domestic energy prices and improve collection levels while protecting low-income groups vulnerable to energy price rises (especially heating and electricity). The oil-refining industry needs to be restructured in countries with considerable excess oil refining capacity; typically, as in Azerbaijan, loss-making refineries have been kept alive by state oil firms.

A favored strategy is unbundling, which entails subjecting some parts of a vertically integrated energy company's operations to increased competition to isolate the segments that are natural monopolies. Unbundling is expected to yield social benefits by reducing the scope for exploitation of market power, eliminating cross-subsidies, and avoiding the loss of control sometimes associated with highly integrated firms. Dismantling monopolies and unbundling may be necessary to assure nondiscriminatory access to pipelines, notwithstanding the potential benefits of vertical integration, such as reduced supply uncertainty and lower transaction costs. The difficulty of establishing and implementing an independent regulatory framework in transition economies should not be underestimated.

Better regional cooperation would also be helpful. With freer, market-based access to pipelines, many of the energy-rich countries could increase their exports outside the region significantly and earn substantially more than they currently do from intraregional sales. The Energy Charter Treaty of 1994, which was signed by 51 countries, including all of the European and Central Asian nations plus Australia and Japan, provides for freedom of energy transit through pipelines and grids (see Box 2).

Box 2
Energy Charter Treaty

The aim of the multilateral Energy Charter Treaty is to strengthen the rule of law on energy issues by creating a level playing field of rules to be observed by all participating governments.

The treaty's provisions focus on five broad areas:

- the protection and promotion of energy investment, based on the extension of national treatment or most-favored-nation treatment (whichever is more favorable);
- free trade in energy materials, products, and equipment, based on the World Trade Organization's rules;
- freedom of energy transit through pipelines and grids;
- mechanisms for the resolution of state-to-state or investor-to-state disputes; and
- energy efficiency and related environmental aspects.

The treaty places considerable emphasis on freedom of transit as the key to the development of energy markets in Eastern Europe and the Baltics, Russia, and the other former Soviet republics and provides for a dispute settlement mechanism for transit issues. However, as evidenced by the still pervasive problems in energy transit, the CIS countries that hold the key to improved efficiency in regional trade—notably Belarus, Russia, and Ukraine—have not yet adopted the treaty's provisions. Some countries, including Russia, have still not ratified the treaty.

Open access would yield substantial long-term benefits associated with improved incentives to invest in exploration, development, and pipeline construction, in addition to the potentially large efficiency gains that would flow from raising energy prices to world market levels. As freer, market-based access to transit pipelines boosts regional energy product prices by stimulating exports, especially to Western Europe, the cost of (explicit and implicit) subsidies to national budgets will rise, putting pressure on governments to implement reform and improve energy efficiency.

Strong vested interests—including both the owners of transit pipelines and energy resources and the governments that receive a share of the monopoly rents—are likely to vigorously oppose further reform, however. Policy reforms that would

improve regional welfare are probably not feasible unless bundled into a package of reforms containing counterbalancing items. Implementing policies that would ensure full adherence to the Energy Charter Treaty could provide part of the solution—for example, by giving exporters of gas in Turkmenistan and of oil in Kazakhstan access to Gazprom's and Transneft's transit pipelines, respectively, on a nondiscriminatory basis. In addition, unbundling and privatizing the transport network could spur investment that would result in increased capacity, lower transport costs, and enhanced competition, although unbundling would need to be carefully sequenced with other reforms.

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